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FERMENTATION TREATMENT OF ORGANIC SUBSTANCE AND ADDITIVE COMPOSITION AND SOLID ADDITIVE USING THE SAME

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Abstract of JP11043390 (A)

PROBLEM TO BE SOLVED: To enable quicker complete fermentation by mixing an organic substance with an additive containing a specific organic industrial waste and an extender and fermenting the resultant mixture. SOLUTION: One or more organic waste materials selected from soluble and decomposable vegetable oils, rice bran, soybean cakes, coffee bean pulps or oil-containing vegetable residues, etc., utilizable as an energy source for microorganisms are mixed with an extender selected from large shavings, fermented composts and other organic solid substances to provide an additive with 40-50% moisture content. The obtained additive is added and mixed with organic substances and the prepared mixture is then aerobically fermented. A sponge material impregnated with the vegetable oils or a solid additive obtained by sealing the vegetable oils in the interior of a gelatinlike shell may be used as the soluble and decomposable vegetable oils. Thereby, the additive can readily and uniformly be mixed therein and complete fermentation for treatment of the organic substances can be conducted simply by carrying out the mixing.

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* NOTICES *

CLAIMS

[Claim(s)]
[Claim 1]A fermentation treatment method of an organic matter mixing and fermenting an additive agent which adds an extender to two or more sorts of organic industrial waste, such as a plant residue containing vegetable oil of ******** which is easy to use for an organic matter as an energy source of a microorganism, rice bran, soybean cake, coffee dregs, or an oil.
[Claim 2]An additive agent used by Claim 1 mixes one sort of organic industrial waste, such as a plant residue which contains vegetable oil, rice bran, soybean cake, coffee dregs, and an oil in one sort or two or more sorts of extenders of saw dust and a fermenting agent compost, and other organic solids, or two or more sorts, and. An additive composition adjusting moisture to 40 to 50%.
[Claim 3]A solid additive agent using vegetable oil used by Claim 1 as a sponge body which impregnated vegetable oil, or a solid body which enclosed vegetable oil with an inside of a gelatinous envelope.

[Translation done.]

* NOTICES *

DETAILED DESCRIPTION

[Detailed Description of the Invention]
[0001]
[Field of the Invention]This invention mixes the additive agent containing the ******** substance which is easy to use for an organic matter as an energy source of a microorganism, and it is related with the additive composition and solid additive agent which are used for the fermentation treatment method of an organic matter and this aiming at promoting fermentation.
[0002]
[Description of the Prior Art]Conventionally, the moisture of an organic matter, PH, C/N, air, temperature, etc. were adjusted to the fermentation of the organic matter, and the fermentation treatment method which promotes good ** fermentation was known. Live cattle feces and urine and the abandonment clay adsorbed in the oil were supplied to the fermenter, the moisture in live cattle feces and urine was evaporated, the moisture content was adjusted with the fermentation heat produced by fermenting said fats and oils, and the rapid fermented compost-ized method for promoting good ** fermentation was known (patent No. 2581882).
[0003]
[Problem(s) to be Solved by the Invention]Although the energy which a microorganism needs in an organic matter was included in said conventional fermentation treatment method, since the energy (food) of the form which a microorganism tends to use was not fully included, there was a problem that fermentation was not promoted promptly. Although fats and oils supply the adsorbed abandonment clay and were fermenting it in live cattle feces and urine by the rapid fermented compost-ized method, it is insufficient as an energy source of a microorganism, and the means for carrying out full fermentation early more was demanded.
[0004]
[Means for solving problem]Since the additive agent containing the appropriate ******** substance which is easy to use this invention for an organic matter as an energy source of a microorganism by being alike was mixed, said problem was able to be solved.
[0005]That is, an invention of process is the fermentation treatment method of the organic matter mixing and fermenting the additive agent which adds an extender to two or more sorts of organic industrial waste, such as a plant residue containing the vegetable oil of ******** which is easy to use for an organic matter as an energy source of a microorganism, rice bran, soybean cake, coffee dregs, or an oil. The additive agent which uses an invention of product in the fermentation treatment method of said organic matter, Mix one sort of organic industrial waste, such as a plant residue which contains vegetable oil, rice bran, soybean cake, coffee dregs, and an oil in one sort or two or more sorts of extenders of saw dust and a fermenting agent compost, and other organic solids, or two or more sorts, and. It is an additive composition adjusting moisture to 40 to 50%, and is a solid additive agent considering it as the sponge body which impregnated vegetable oil for the vegetable oil used in the fermentative-treatment method of said organic matter, or the solid body which enclosed vegetable oil with the inside of a gelatinous envelope.
[0006]All the organic industrial waste that is easy to use out of the above as an energy source of microorganisms, such as strained lees of sugar and vegetable debris, is contained in said

******** substance. All the vegetable oil, such as oleum rapae, sesame oil, and sunflower seed oil, is contained in said vegetable oil, and a used vegetable abandonment oil is also contained.
[0007]
[Mode for carrying out the invention]According to this invention, the additive agent containing the ******** substance which is easy to use for an organic matter as an energy source of a microorganism is mixed, and an organic matter is fermented. An additive agent mixes one sort of organic industrial waste, such as a plant residue containing the vegetable oil, the soybean cake, rice bran, the coffee dregs, or the oil which becomes an extender which consists of one sort, such as saw dust and a fermented compost, or two or more sorts from a ******** substance, or two or more sorts, and it is the additive composition which adjusted moisture to 45 to 50%.
[0008]Vegetable oil is used as a solid body which made the sponge body impregnate or was packed inside the gelatinous envelope.
[0009]
[Work example 1]The working example of the constituent additive agent of this invention is described.
[0010]5 kg of saw dust and 100 kg of fermented composts are fed into a treatment tank as 3 kg of soybean cake, 3 kg of rice bran, 2 kg of vegetable oil, and an extender, and it mixes. The moisture of said mixture is adjusted to 40 to 50%, and it is considered as a constituent additive agent. Said moisture was made into 40 to 50% in order to make it be easy to mix to an organic matter. When there is too much moisture of an injection thing, it adjusts in the quantity of saw dust, and in being small, it sprinkles and adjusts livestock urine.
[0011]
[Work example 2]An working example of a solid additive agent of this invention is described.
[0012]If a sponge sphere with an outer diameter [made of a synthetic resin] of 20 mm which has many continuation stomata is made to absorb 2.4 g per piece of vegetable oil, a solid additive agent will be made. This solid additive agent was put into an addressing bag to 20 kg, was sealed, and it was considered as a product.
[0013]
[Work example 3]Other working examples of a solid additive agent of this invention are described. The vegetable oil 6g which is a ******** substance is enclosed with a centrum of a hollow gelatin sphere with an outer diameter of 20 mm, and it is considered as a solid additive agent.Said gelatin sphere was filled in an addressing bag to 20 kg, this was sealed, and it was considered as a product.
[0014]
[Work example 4]An working example of a fermentation treatment method of livestock-droppings urine which uses an additive composition of this invention is described.
[0015]1000 kg of livestock-droppings urine is fed into a treatment tank. Next, 30 kg - 50 kg of additive compositions are thrown in, and it stirs with an agitator, and mixes uniformly. Quantity of said additive composition was 30 kg - 50 kg because there would be too few energy sources of a microorganism and activity of a microorganism would not be performed actively, if 30 kg or less was used. As compared with a case where 50 kg of additive compositions are thrown in as for not less than 50 kg on the other hand, it is because a larger effect is not accepted. In order to promote said aerobic fermentation, fermentation treatment was completed in a place which stirred said mixture every other day and supplied sufficient air, and ten days. In this case, temperature up of a maximum of 80 ** was carried out, and a bactericidal effect also showed up.

[0016]
[Effect of the Invention]This invention is effective in an organic matter being made as for fermentation treatment to them at **** or **, since the ******** substance which is easy to use as an energy source of a microorganism was mixed to organic matters (livestock-droppings urine etc.). Since organic industrial waste, such as a plant residue which contains soybean cake, coffee dregs, rice bran, and an oil as a ******** substance, is the main ingredients, it is effective in changing organic industrial waste into a useful compost. Since the additive agent of this invention made the sponge body absorb vegetable oil or enclosed vegetable oil with the

gelatinous envelope, there is an effect which can mix an additive agent easily and uniformly. Therefore, on the occasion of processing of an organic matter, it is effective in the ability to attain the purpose by only mixing.

[Translation done.]

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(54)【発明の名称】　有機物の発酵処理方法及びこれに用いる添加剤組成物並びに固形添加剤

(57)【要約】
【課題】　この発明は有機物に微生物のエネルギー源として利用し易い溶分解性物質を含む添加剤を混合して、有機物の発酵を促進することを目的としたものである。
【課題解決する為の手段】　有機物に、微生物のエネルギー源として利用し易い溶分解性の植物油、米糠、大豆粕、コーヒー粕、又は油を含有する植物残渣等の有機産業廃棄物の複数種に増量剤を加えてなる添加剤を混合して発酵させることを特徴とした有機物の発酵処理方法。

【特許請求の範囲】
【請求項１】　有機物に、微生物のエネルギー源として利用し易い溶分解性の植物油、米糠、大豆粕、コーヒー粕、又は油を含有する植物残渣等の有機産業廃棄物の複数種に増量剤を加えてなる添加剤を混合して発酵させることを特徴とした有機物の発酵処理方法。
【請求項２】　請求項１で使用する添加剤は大鋸屑及び発酵剤堆肥その他の有機固形物の１種又は複数種の増量剤に、植物油と米糠、大豆粕、コーヒー粕及び油を含有する植物残渣等の有機産業廃棄物の１種又は複数種を混合すると共に、水分を４０～５０％に調整したことを特徴とする添加剤組成物。
【請求項３】　請求項１で使用する植物油は、植物油を含浸したスポンジ体、又はゼラチン状外皮の内部に植物油を封入した固形体とすることを特徴とした固形添加剤。
【発明の詳細な説明】
【０００１】
【発明の属する技術分野】この発明は有機物に微生物のエネルギー源として利用し易い溶分解性物質を含む添加剤を混合して、発酵を促進することを目的とした有機物の発酵処理方法及びこれに用いる添加剤組成物並びに固形添加剤に関する。
【０００２】
【従来の技術】従来、有機物の発酵には、有機物の水分、ＰＨ、Ｃ／Ｎ、空気、温度等を調整して、好氣的発酵を促進する発酵処理方法が知られていた。また生牛糞尿と油が吸着された廃棄白土とを発酵槽に投入して、前記油脂を発酵させることにより生ずる発酵熱により、生牛糞尿中の水分を蒸発させて水分量を調整し、好氣的発酵を促進させる急速発酵堆肥化法が知られていた（特許第２５８１８８２号）。
【０００３】
【発明により解決すべき課題】前記従来の発酵処理方法では、有機物中に、微生物が必要とするエネルギーは含まれているが、微生物が利用し易い形体のエネルギー（餌）が充分に含まれていない為、発酵が速やかに促進されない問題点があった。また急速発酵堆肥化法では生牛糞尿中に油脂が吸着された廃棄白土を投入して発酵させているが、微生物のエネルギー源として不十分であり、より早く完全発酵させる為の手段が要請されていた。
【０００４】
【課題を解決するための手段】然るにこの発明は有機物に、微生物のエネルギー源として利用し易い溶分解性物質を含む添加剤を混合したので前記問題点を解決することができた。
【０００５】即ち方法の発明は、有機物に、微生物のエネルギー源として利用し易い溶分解性の植物油、米糠、大豆粕、コーヒー粕、又は油を含有する植物残渣等の有機産業廃棄物の複数種に増量剤を加えてなる添加剤を混合して発酵させることを特徴とした有機物の発酵処理方法である。また物の発明は、前記有機物の発酵処理方法において使用する添加剤を、大鋸屑及び発酵剤堆肥その他の有機固形物の１種又は複数種の増量剤に、植物油と米糠、大豆粕、コーヒー粕及び油を含有する植物残渣等の有機産業廃棄物の１種又は複数種を混合すると共に、水分を４０～５０％に調整したことを特徴とする添加剤組成物であり、また、前記有機物の発酵処理法法において使用する植物油を、植物油を含浸したスポンジ体、又はゼラチン状外皮の内部に植物油を封入した固形体とすることを特徴とした固形添加剤である。
【０００６】前記溶分解性物質には、前記の外に砂糖の搾り粕、野菜屑等の微生物のエネルギー源として利用し易い有機産業廃棄物が全て含まれる。また前記植物油には菜種油、ごま油、ひまわり油等全ての植物油が含まれ、使用済の植物廃棄油も含まれる。
【０００７】
【発明の実施の形態】この発明によれば、有機物に微生物のエネルギー源として利用し易い、溶分解性物質を含む添加剤を混合し、有機物を発酵させたものである。また添加剤は大鋸屑及び発酵済堆肥等の１種又は複数種からなる増量剤に溶分解性物質からなる植物油と大豆粕、米糠、コーヒー粕、又は油を含有する植物残渣等の有機産業廃棄物の１種又は複数種を混合すると共に、水分を４５～５０％に調整した添加剤組成物である。
【０００８】更に植物油は、スポンジ体に含浸させ、或いはゼラチン状外皮の内部に包装した固形体として用いる。
【０００９】
【実施例１】この発明の組成物添加剤の実施例を説明する。
【００１０】処理槽に大豆粕３Kg、米糠３Kg、植物油２Kg及び増量剤として大鋸屑５Kg及び発酵済堆肥１００Kgを投入し混合する。前記混合物の水分を４０～５０％に調整して組成物添加剤とする。前記水分を４０～５０％としたのは有機物に混合し易いようにする為である。また投入物の水分が多すぎる場合には大鋸屑の量で調整し、少ない場合には家畜尿を散布して調整する。
【００１１】
【実施例２】この発明の固形添加剤の実施例について説明する。
【００１２】多数の連続気孔を有する合成樹脂製の外径２０㎜のスポンジ球体に、１個当り２．４ｇの植物油を吸収させれば固形添加剤ができる。この固形添加剤を２０Kg宛袋に入れて密封して製品とした。
【００１３】
【実施例３】この発明の固形添加剤の他の実施例を説明する。外径２０㎜の中空ゼラチン球体の中空部に、溶分解性物質である植物油６ｇを封入して固形添加剤とす

る。前記ゼラチン球体を２０Kg宛袋に詰めこれを密封して製品とした。

【００１４】

【実施例４】この発明の添加剤組成物を使用した家畜糞尿の発酵処理方法の実施例を説明する。

【００１５】処理槽に家畜糞尿１０００Kgを投入する。次に添加剤組成物３０Kg～５０Kgを投入し、攪拌機で攪拌して均一に混合する。前記添加剤組成物の量を３０Kg～５０Kgとしたのは３０Kg以下にすると微生物のエネルギー源が少なすぎて微生物の活動が活発に行なわれないからである。一方５０Kg以上にしても添加剤組成物を５０Kg投入した場合に比較して、より大きい効果が認められないからである。前記好気性発酵を促進する為に前記混合物を１日おきに攪拌して十分な空気を補給した所、１０日間で発酵処理が完了した。この場合においては最高８０℃まで昇温し、殺菌効果も出た。

【００１６】

【発明の効果】この発明は有機物（家畜糞尿など）に、微生物のエネルギー源として利用し易い溶分解性物質を混合したので有機物を速みやかに発酵処理ができる効果がある。また溶分解性物質として大豆粕、コーヒー粕、米糠、油を含有する植物残渣等の有機産業廃棄物が主成分なので有機産業廃棄物を有用な堆肥に変える効果がある。またこの発明の添加剤は植物油をスポンジ体に吸収させ、または植物油をゼラチン状の外皮に封入したので、添加剤を容易かつ均等に混入出来る効果がある。従って有機物の処理に際し、単に混合するのみで目的を達成できる効果がある。